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**Task 1 - Energy auditing a computer system & recommend how sustainability can be integrated into an upgrade**



Instruction

• Gather information to prepare the installation of an energy measuring device on a computer system

• Prepare for the installation of the device

• Configure and test the device

• Complete and document installation and test results

• Evaluate opportunities to integrate sustainable ICT projects and reduce energy consumption

**Project Resources**

Current Cost EnviR Energy Monitor

Warning: Installation is simple yet if you are in Australia, for liability reasons it is required to be carried out by a qualified electrician when in in a power switchboard.

* <http://www.smartnow.com.au/installinstructions.php>
* <http://www.smartnow.com.au/current_cost_bridge.php>

**Theory**

1. Does the Current Cost EnviR Energy Monitorcomply with Electrical Safety Standards?

Yes, it’s complying with Electrical Safety Standards.

1. Advise how you prepared the installation of Current Cost EnviR Energy Monitor

Contents

• EnviR Display

• S² transmitter with CT Jaw

• Power Adapter for Display

1) The display power adapter should be connected to the round socket found in the base of the display unit.

2) Plug the display power adapter into a convenient wall socket.

3) The ‘Energy Now’ value on the display will now show dashes. The EnviR energy monitor should be left powered on at all times to read energy correctly and run its clock.

4) Remove the plastic battery tab from the back of the black transmitter unit; the transmitter will now be activated.

5) If the display shows ‘0 Watts’ the display has already been paired and is ready to use. If it shows dashes the display and transmitter need pairing. It is good practice to uniquely pair your display to avoid cross communication with a neighbours monitor.

1. Advise how you configured and tested the Current Cost EnviR Energy Monitor
2. Connect the clamp to the live wire and connect transmitter unit.
3. Turn on the transmitter unit.
4. Connect the transmitter unit to PC to download the data.
5. Analyse the result with the computer to generate the report.
6. Advise how you could document the installation and energy audit

(see<http://my.currentcost.com/>)

Record the electrical power consumption while doing the test conditions such as PC, Thin client, Web client and Server

**Practicum**

* **Identify power consumptionof a computer system under different operating conditions using the Current Cost EnviR Energy Monitor and appropriate power lead or similar energy meter.**
* **Recommendations on upgrading computer system.**

1. Record power consumption and notes e.g. range, variability, operating conditions:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Condition** | **Power consumption**  **(watts)** | | | | **Notes** |
|  | **PC** | ThinClient  Y100 | WebClient | Server Blackbox |  |
| **OFF** | 17 | 0.3 | 0.27 | 19 |  |
| **MAX BOOT** | 51 | 3.5 | 5.1 | 42 |  |
| **IDLE** | 42 | 3.2 | 3.4 | 42 |  |
| **Wordprocessing** | 36 | 3.3 | 5.1 | 44 |  |
| **Spreadsheets** | 36 | 3.3 | 5.1 | 44 |  |
| **Web browsing**  <http://news.bbc.co.uk/2/hi/programmes/click_online/default.stm> | 45 | N/A | 4.6 | N/A |  |
| **Low level music**  <http://grooveshark.com/#/s/Fall+At+Your+Feet/3KIZB0?src=5> | 44 | N/A | 6.7 | N/A |  |
| **Low level video**  <http://www.joost.com/39w1yk49/#/?video_info=33p1yw1t> | 57 | N/A | 5.2 | N/A |  |

1. Evaluate the extent to which sustainability could be integrated into an upgrade of the computer system. Advise your recommendations:

**Online commerce and paperless billing**

Eliminating paper bills is an obvious way to cut costs and ease the strain on the environment. The financial, telecommunications, public utility, insurance, healthcare and retail industries have led this trend, which reduces logging, paper processing, and the fuel consumption associated with transporting bills and payments. Every year in the US alone, paper cheques account for an estimated 674m gallons of fuel and add 3.63 m tons of CO2 into the atmosphere, according to Boston-based Dove Consulting Group. But creating paperless systems is not easy. There are various approaches to establishing paperless account management, and decisions about online strategies depend on a number of factors. Chief among them are whether to pay outright for software, servers and staff, or to outsource these services to an online bill-paying service. Large companies that can afford the capital expense and have the necessary IT staff tend to choose the former option, because it allows greater control over the customer experience. Smaller companies often go with the hosted option, as this allows them to focus on their core business. Educating all employees about the benefits of paperless billing, regardless of the business unit that they work in, is also beneficial. Con Edison, an electric utility serving the city of New York, began a campaign in 2007 to migrate customers to paperless billing. Instead of confining the plan to the IT and billing departments, it waged an aggressive green campaign both inside and outside the company to promote e-billing, which involved the marketing, billing, finance, website, public affairs and advertising departments. To reach customers, Con Edison produced radio and subway advertisements and direct mailings (which may run counter to the paperless spirit, but “you have to reach out initially,” says George Roach, the customer operations systems specialist who runs the programme). When customers phoned for service and were placed on hold, the company reminded them about the benefits of e-billing. Corporate communications was also very involved, educating Con Edison employees about the cost and building-maintenance costs. Top management is leading the way by being the first to use the mobile office concept.